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REMOTE SENSING OF PERMAFROST AND GEOLOGIC HAZARDS IN ALASKA

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1 March 1973

Type I Progress Report for Period 1 January - 28 February 1973

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Type I Progress Report  
ERTS-A

a. Title: Remote Sensing of Permafrost and Geologic Hazards in Alaska

ERTS-A Proposal No.: SR 207

b. GSFC ID No. of P.I.: IN 386

c. Statement and explanation of any problems that are impeding the progress of the investigation:

None.

d. Discussion of the accomplishments during the reporting period and those planned for the next reporting period:

The study of ERTS imagery and the compilation of data acquired from this imagery and from other sources are being carried out. In addition, the pertinent data are being compiled on a new 1:2,000,000-scale base map of Alaska.

The study of the imagery and the compilation of pertinent data will be continued during the next reporting period.

e. Discussion of significant scientific results and their relationship to practical applications or operational problems including estimates of the cost benefits of any significant results (To be prepared in scientific abstract form of 200 words or less):

The study of the ERTS imagery of Alaska indicates the following: that areas of different topographic expression affecting the distribution and character of permafrost can be distinguished clearly; that on the Arctic North Slope, regional differences in the distribution and character of permafrost-related oriented thaw lakes can be observed; that the distribution of certain types of geologic materials having a significant effect on the character of permafrost can be delineated on a regional scale; and that the resolution of the imagery is adequate to identify large-scale geologic hazards such as landslides, glacier-dammed lakes, aufeis fields, etc.

The information concerning the distribution and character of permafrost and geologic hazards to be gained in accomplishing the objectives of this project will be an invaluable aid in solving

engineering-geologic and environmental problems related to route and site selection for structures such as roads, railroads, pipelines, and large installations; to distribution of natural construction materials; and to construction and maintenance.

f. A listing of published articles, and/or papers, pre-prints, in-house reports, abstracts of talks, that were released during the reporting period:

Ferrians, O. J., Jr., and Kachadoorian, Reuben, 1973, Permafrost-related engineering problems and the trans-Alaska pipeline [abs.]: Geol. Soc. America Abs. with Programs 1973, v. 5, no. 1, Cordilleran Sec., p. 41-42.

g. Recommendation concerning practical changes in operations, additional investigative effort, correlation of effort and/or results as related to a maximum utilization of the ERTS system:

None.

h. A listing of data of any changes in Standing Order Forms:

None.

i. ERTS Image Descriptor forms:

None.

j. Listing by date of any changed Data Request forms submitted to Goddard Space Flight Center/NDPF during the reporting period:

None.

k. Status of Data Collection Platforms (if applicable):

Not applicable.